THE IMPACT OF MERGERS AND ACQUISITIONS ON EXECUTIVE PAY IN THE UNITED KINGDOM

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Abstract
We examine the impact of acquisitions on executive pay in UK acquirers over 1984-2001. For the overall sample, which includes foreign, domestic, public and private targets, there is a significant transitory pay increase. Pay changes are not affected by target nationality or organizational form, although initial cross-border acquisitions do result in higher pay. Pay increases are higher following acquisitions of targets with high pay, but not of targets in high pay countries. CEOs are rewarded equally for bad and good acquisitions, and those well rewarded are more likely to reacquire. However, bad acquisitions do not on average increase CEO wealth because of an offsetting decline in CEO shareholding value. Pay impacts are not affected by the corporate governance characteristics of the acquiring firm.

JEL Codes: G34; J33

Keywords: Executive compensation; acquisitions; cross-border; private; corporate governance

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INTRODUCTION

There is a popular perception that many mergers and acquisitions are carried out to increase size in an attempt to increase compensation (see, e.g., Jensen, 1986). The empirical literature on executive pay documents a strong link between firm size and executive pay, and a much weaker link between pay and performance (Murphy, 1999). Consequently, making a firm larger by acquisition could increase the compensation of an existing manager, regardless of whether the acquisition creates value or not.[1] The empirical literature on takeovers suggests that a majority of takeovers neither improve profitability nor benefit acquirer shareholders (see, e.g., Hughes, 1989). This has been the motivation for the majority of studies that make up the large empirical literature on the effects of M&A activity on executive compensation.

This literature, shows that acquiring firms are on average rewarded with higher absolute compensation following acquisition (Khorana and Zenner, 1998; Bliss and Rosen, 2001; Anderson et al., 2002; Grinstein and Hribar, 2004; Girma et al., 2006; and Harford and Li, 2007). Evidence on whether these pay increases are greater than would be expected from internal growth is mixed. Firth (1991), Conyon and Gregg (1994), Khorana and Zenner (1998), and Girma et al. (2006) find evidence in favour, whilst Avery et al. (1998), Bliss and Rosen (2001), Anderson et al., (2002), and Harford and Li (2007) find evidence against. Evidence on whether bad acquisitions also result in pay increases is also mixed. Lambert and Larcker (1987), Khorana and Zenner (1998), and Girma et al. (2006) find no evidence of this, whilst Firth (1991), Avery et al. (1998), Bliss and Rosen (2001) and Anderson et al., (2002) find evidence in favour. The evidence on how poor acquisitions affect overall director wealth (pay plus shareholding value) is mixed. Firth (1991) and Bliss and Rosen (2001) find that poor acquisitions result in an increase in total CEO wealth, whilst Lambert and Larcker (1987) find that the effect on CEO wealth is negative. If pay awards following acquisition are a manifestation of agency problems, then pay awards should be constrained by sound corporate governance. The evidence is, once again, mixed. Grinstein and Hribar (2004) show that CEOs receive significantly larger cash bonuses when the CEO is also the chairman and when the CEO also sits on the nominating committee, whilst Anderson et al. (2002), find no evidence that pay increases are related to either CEO share ownership or tenure.[2]

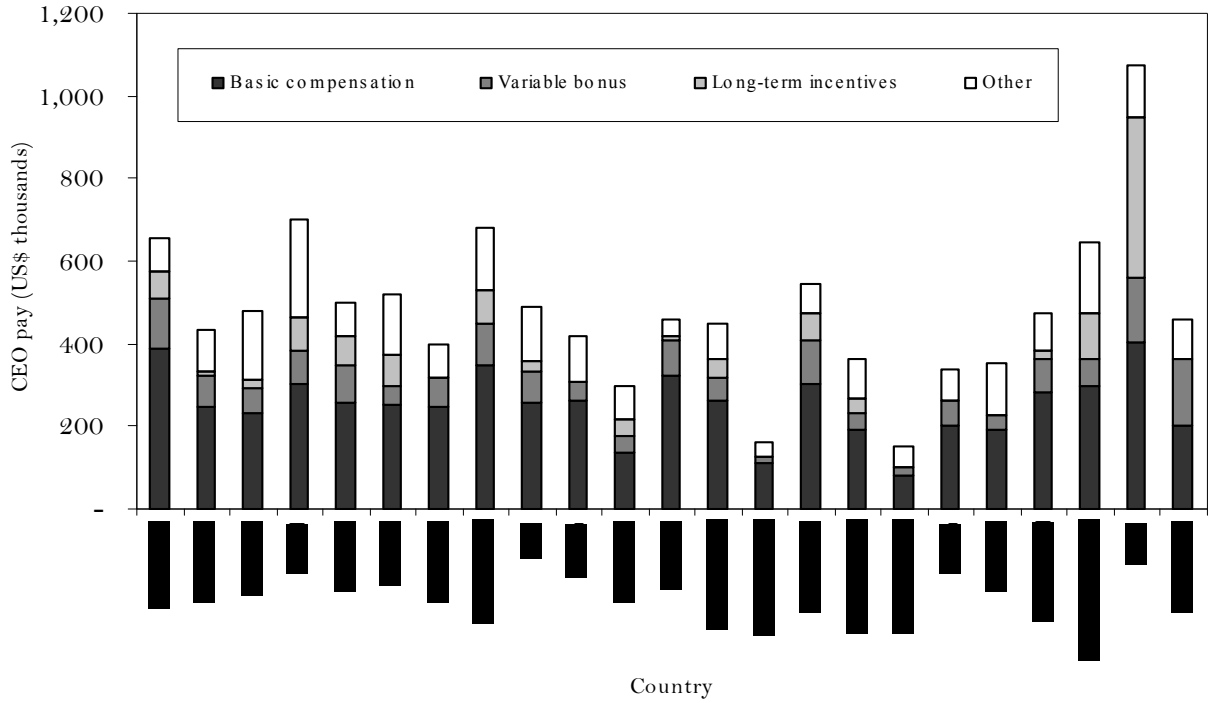
The extant literature exhibits a variety of sampling procedures and methodologies and is clearly ambiguous in its findings. One significant drawback with this literature is that it focuses on only one subset of acquisitions, those of domestic companies that are publicly listed. No study has

included, or examined the difference between, acquisitions of cross-border as well as domestic targets, or acquisitions of private as well as public targets. These types of acquisitions are quantitatively very important, accounting for a significant and increasing proportion of takeover activity (Conn et al., 2005). There are also a number of reasons why pay impacts will differ across these different types of acquisitions.[3]

Cross-border acquisitions may result in a more complex organisation due to factors such as geographic dispersion, multiple currencies, and cultural differences (see e.g., Duru and Reeb, 2002). According to the matching theory (Rosen, 1992), multinational firms may bid up the compensation of highly skilled executives because their managerial product is higher at such firms. Alternatively, an increase in managerial compensation might follow the confirmation of the multinational talent of the manager and putting it to the test at the newly merged entity. Consistent with these arguments, previous studies show that executive pay is positively related to international scope (Persons, 2001; Duru and Reeb, 2002; Ramcharran, 2002; and Thompson et al., 2002).

Another reason that both cross-border and public acquisitions will have a more positive impact on executive pay relates to the level of pay in the target company. Where the acquirer's level of pay is lower than that of the acquiree, there may be a tendency for the acquirer's pay levels to gravitate towards the acquiree's levels following acquisition. Maintaining separate wage scales for executives could be difficult and interfere with integration of the operations of the combined firms, and post-merger equality in compensation systems may be easier to achieve through pay rises than through pay cuts. As shown in Figure 1 below, important international differences in compensation exist. In particular, CEO pay is significantly higher in the US than elsewhere (see e.g., Murphy, 1999; and Conyon and Murphy, 2000). This is of particular importance in the context of our sample, since US targets account for almost half of all cross-border acquisitions by UK acquirers. Murphy (1999) argues that, "foreign companies acquiring US subsidiaries face huge internal pay inequities, often resolved by increasing home-country executive pay" (p.8).[4, 5, 6] The same argument holds for acquisitions of public targets because public firms tend to pay higher executive compensation than private firms (Ke et al., 1999).[7]

FIGURE 1
INTERNATIONAL COMPARISON OF CEO PAY LEVELS AND STRUCTURES



Note: Data from Towers Perrin's Worldwide Total Reward report, 1999. Data reflects Towers Perrin's estimate of CEO pay as of April 1999 for industrial companies with approximately US $250 million in annual revenues.

In this paper, we empirically examine the impact of a comprehensive sample of 4,528 acquisitions on the executive pay of 2,469 publicly listed UK firms over the period 1984-2001. It is the analysis of this comprehensive sample, which includes foreign, domestic, public and private acquisition targets, that marks our key contribution to the literature. One concern with the extant literature is the generality of the findings, given that only a minority of acquisitions are examined. Firstly, therefore, we provide findings on pay impacts which are robust to the inclusion of all acquisition types. We find that acquisitions result in significant pay increases in the year following acquisition, but that the increase is transitory and offset by a similar decline two years after acquisition, possibly because the initial increase represents a one off bonus payment. Secondly, we distinguish pay impacts according to target nationality and organizational form and test the specific hypotheses described above. Such an analysis improves our understanding of the factors that determine pay changes around acquisition. We find no evidence that pay changes are affected by target nationality or organizational form. However, initial cross-border acquisitions, which presumably have a marginally greater impact on international exposure than subsequent acquisitions, do result in significantly higher pay. Since the previous studies above do not consider the impact of different forms of

geographic expansion on executive pay, this result enhances our understanding of the mechanism through which such impacts occur. We find that although pay changes are significantly higher when the target company has relatively high pay, acquisitions in high pay countries do not result in higher pay. Our third contribution is to examine a key theme in the literature, namely the motivation of acquirers to make poor acquisitions because of executive pay considerations. In contrast to previous studies, we do so for a comprehensive sample, examining whether the propensity to acquire depends on prior acquisition pay awards, and whether bad acquisitions result in pay increases and an overall increase in CEO wealth. We find that propensity to acquire is higher following high pay awards, and that even bad acquisitions result in pay increases, although such increases are far outweighed by declines in CEO share values. Finally, we contribute to the literature by examining whether weak corporate governance results in higher pay awards and hence whether such awards are a manifestation of agency problems. We find no evidence of this.

The paper proceeds as follows: Section I describes the econometric methodology and the data. In Section II we present the empirical results. Section III concludes.

I. METHODOLOGY AND DATA

To test for the existence of a relationship between top executive compensation and acquisitions we build on a basic relationship between executive pay and the various determinants which have been identified as important in the literature on executive pay (see e.g., Girma et al., 2006). This basic relationship may be written as follows:

$$\ln Pay_{it} = \beta_0 + \beta_1 \ln Pay_{it-1} + \beta_2 \ln Sales_{it} + \beta_3 ROA_{it} + \beta_4 MTBV_{it} + \beta_5 Acquisition_{it} + f_i + h_t + e_{it} \quad (1)$$

where Pay_{it} is defined as the total cash compensation (salary plus bonus) of the highest paid director in company i at time t. Pay_{it-1} is the lagged value of variable Pay_{it}. The impact coefficient β_1 gives an estimate of the degree of top pay persistence. Previous studies have shown that there is significant persistence in top pay (Conyon, 1997; Girma et al., 2006) and therefore it needs to be controlled for. $Sales_{it}$ represents firm sales and is our measure of company size, which is necessary to control for since most compensation studies have found a positive relation between compensation and firm size. ROA_{it} is the accounting return on assets, computed as the ratio of earnings before interest and taxes to total assets. Agency theories predict that firm performance will be positively correlated with compensation. $MTBV_{it}$ is the market to book value.

$Acquisition_{it}$ is a set of dummy variables for the years surrounding acquisition. It may take time for the effects of acquisition on pay to be observable (Girma et al., 2006) and therefore separate acquisition variables were defined for the year following acquisition and then for each of the following two years to capture lagged effects. Additionally, to examine whether any pay effects are the result of the acquisition and not the continuation of a pre-merger trend, acquisition variables were also defined for the two years preceding acquisition to capture lead effects. f_i are firm specific fixed effects which are included to purge from the estimated equation any unobserved time invariant company factors that may contaminate the estimation of the pay regression. h_t are year dummies employed to account for economy-wide shocks, and e_{it} is an error term.

With regard to our measure of executive pay, we follow other UK executive pay work (see, e.g., Girma et al., 2006) in defining CEO compensation as the reported emoluments (salary plus bonus plus the cash equivalents of any perquisites but excluding pension contributions) of the highest paid director. Until 1997, this was the only widely available measure of CEO pay. Although it has been possible since 1997 to identify the specific components of compensation (such as stock options) received by each board member, given the econometric model employed here (which requires 2 years of lagged compensation) any analysis involving this more recent data would be restricted to years 1999-2001 only. Hence for almost all our sample period, the reported pay plus bonus of the highest paid director is the only measure of compensation available and subsequently the only measure employed. We expect any bias introduced by not examining long term incentives to be minimal. For most of the sample period, maximum option grants were tied to base salary and hence were not an independent element of salary and the evidence suggests that long term incentives form only a small part of executive compensation (Conyon and Murphy, 2000).

The presence of a lagged dependent variable in panel data models renders the conventional fixed effects estimator biased (Nickell, 1981). To avoid this problem, we adopt the first difference transformation of equation (1) to eliminate the company specific fixed effects as originally suggested by Anderson and Hsaio (1982) as follows:

$$\Delta \ln Pay_{it} = \beta_0 + \beta_1 \Delta \ln Pay_{it-1} + \beta_2 \Delta \ln Sales_{it} + \beta_3 \Delta ROA_{it} + \beta_4 \Delta MTBV_{it} + \beta_5 Acquisition_{it} + f_i + h_t + e_{it} \quad (2)$$

where the operator Δ on any variable X is simply current value X minus last period value (that is, $\Delta X = X_t - X_{t-1}$).

Taking first differences as in equation (2) induces an MA(1) error term, and therefore estimation of this dynamic panel data model by least squares results in biased estimates on the lagged dependent variable, β_1 (Nickell, 1981). We employ instrumental variable techniques to avoid such problems. The MA(1) error structure suggests that under the null of no serial correlation, valid instruments are those dated *t-2* and earlier. We instrument $\Delta \ln Pay_{it-1}$ with lags of pay in levels ($\ln Pay_{it-2}$), sales ($\ln Sales_{it-2}$), profitability (ROA_{it-2}), MTBV ($MTBV_{it-2}$), and year dummies.[8] This approach has been used by previous empirical pay studies in the UK (Main et al., 1996; Conyon, 1997; and Girma et al., 2006). We estimate the model using the Arrellano and Bond (1991) generalised method of moments (GMM) procedure as contained in the econometric programme Stata. This yields valid instrumental variable estimates in the absence of second-order serial correlation. The validity of the instrument set and the success of the instrumentation process in purging the estimates of second order serial correlation are examined using the Sargan test of instrument validity and a test for second order serial correlation, respectively.

The data used in this analysis is derived from two separate sources. The first source is Datastream, from which director compensation, sales, profitability and MTBV are derived. Three successive years of data are required because the regression model described in equation (2) requires two years of lagged data. It was therefore necessary to exclude from the Datastream population of UK public firms those firms lacking three continuous years of director compensation, sales, profitability, and MTBV over the period 1982-2001. Our pay model is estimated from 1984 to 2001, but for 1984 observations we require data going back to 1982. Our final sample consists of an unbalanced panel (i.e., differing time series observations per company) of 2,471 companies between 1984 and 2001 for which we have 19,565 firm year observations. The balance of the panel is shown in Table 1 below.

TABLE 1
BALANCE OF THE PANEL, 1984-2001

Number of data observations	Number of companies	Acquirers	Non-acquirers
1	294	87	207
2	238	66	172
3	250	101	149
4	220	108	112
5	143	71	72
6	136	74	62
7	112	74	38
8	64	44	20
9	86	57	29
10	94	68	26
11	90	61	29
12	95	76	19
13	75	56	19
14	76	62	14
15	95	78	17
16	72	60	12
17	44	36	8
18	285	229	56
Total	2,469	1,408	1,061

Two secondary datasources, Thomson Financial SDC Mergers Database and the Thomson Financial magazine Acquisitions Monthly, were then used to attempt to identify every acquisition made by the sample firms over the period January 1st 1984 to December 31st 2001. Acquisitions are defined as occurring when the bidder owns less than 50% of the target's voting shares before the takeover, and increases its ownership to at least 50% as a result of the takeover. We adopt a materiality constraint that limits our sample to acquisitions in which the target's acquisition value is at least 5% of the acquiring firm's market value in the acquisition month.[9]

Our final sample consists of 4,528 acquisitions, carried out by 1,408 acquirers. The balance of the panel for acquirers and non-acquirers is shown in Columns (3) and (4) of Table 1. The annual breakdown of the sample acquisitions is reported in Table 2, and is broken down according to whether the target company is a UK or foreign firm, or a public or private firm. Of the 4,528 acquisitions, 29 percent are acquisitions of cross-border targets. 49 percent of these are acquisitions of US targets, highlighting the importance of US targets in the cross-border acquisition activity of UK acquirers. Of the other 660 cross-border acquisitions, the vast majority (76%) involve European targets. Only 17 percent of the sample acquisitions involve public targets. Acquisitions of

domestic public targets, the type of acquisition that previous studies have focused on, account for only 13 percent of the sample.

TABLE 2
FREQUENCY OF SAMPLE ACQUISITIONS, BY TYPE, 1984-2001

Year	All acquisitions	Domestic public	Domestic private	Cross-border public	Cross-border private
1984	11	0	5	2	4
1985	100	50	28	1	21
1986	193	63	80	6	44
1987	271	65	139	10	57
1988	425	51	266	19	89
1989	367	44	211	17	95
1990	277	26	160	6	85
1991	196	21	121	2	52
1992	183	19	118	3	43
1993	213	20	141	4	48
1994	283	22	196	6	59
1995	261	28	157	5	71
1996	288	19	190	8	71
1997	312	29	191	10	82
1998	303	34	172	12	85
1999	302	41	166	25	70
2000	331	35	172	25	99
2001	212	12	143	6	51
Total	4,528	579	2,656	167	1,126

Table 3 below reports the absolute size of the different types of acquisitions. Total deal value is the total value of all transactions. Deal size is the value of the transaction. Acquirer size is the acquirer's market value at the start of the announcement month. Relative size is deal size divided by acquirer size.[10] Domestic targets tend to be smaller in absolute terms but larger in relative terms than cross-border targets, whilst public targets tend to be larger in both absolute and relative terms than private targets.

TABLE 3
SIZE OF SAMPLE ACQUISITIONS, BY TYPE

	All acquisitions	Domestic public	Domestic private	Cross-border public	Cross-border private
Observations	4,528	579	2,656	167	1,126
Total deal value (£ billion)	267,802	76,597	69,213	40,183	81,810
Deal size (£ million) mean	61	134	27	247	75
Acquirer size (£ million) mean	299	496	137	1,115	448
Relative size mean	0.33	0.56	0.31	0.39	0.22

Table 4 below presents the summary statistics for the continuous variables (compensation, sales, profitability and MTBV) used in the regression analysis.

TABLE 4
SUMMARY STATISTICS OF CONTINUOUS REGRESSION VARIABLES

Variable	Observations	Mean	Median	Standard deviation	1st quartile	3rd quartile
Pay	19,565	239.69	162.42	233.45	102.77	281.25
Sales	19,565	528,104.72	78,007.91	1,310,667.50	24,897.99	289,903.14
ROA	19,565	0.08	0.10	0.15	0.05	0.14
MTBV	19,565	2.53	1.69	5.35	0.95	3.03

II. EMPIRICAL RESULTS

Column (1) of Table 5 below reports the results of estimating equation (2). The coefficient for Δ ln Pay_{it-1} is significantly positive, indicating that changes in pay are positively related to prior compensation levels. The coefficient for Δ ln $Sales_{it}$ is significantly positive. The coefficient for Δ ROA_{it} is insignificantly positive, whilst the coefficient for Δ $MTBV_{it}$ is insignificantly negative. These results are robust and hold throughout the rest of the analysis. Diagnostics for the instrument set are satisfactory. Both the Sargan *p*-value and the 2nd order serial correlation *p*-value are insignificant (*p*-values of 0.4609 and 0.2032 respectively). Again, these values are similar for the rest of the analysis.[11]

Turning to the impact of acquisition, acquirers experience significantly positive pay changes in the one and two years prior to acquisition. This is consistent with the evidence of Harford and Li (2007), who suggest that firms with overpaid CEOs have weak governance, and it is firms with weak governance who are able to undertake acquisitions. The coefficient for the acquisition year ($Acquisition_{it}$) is also significantly positive, but it is not significantly different from the coefficients for the one and two years prior to acquisition. The coefficient for the second year following takeover completion ($Acquisition_{it-1}$) is statistically insignificant, yet the coefficient for the third year following completion ($Acquisition_{it-2}$) is significantly negative and of a similar magnitude to the positive coefficient for the acquisition year.[12] Therefore for the overall sample of acquisitions, there is a positive change following acquisition, yet it is no different from the changes prior to acquisition and is reversed in the third year following acquisition.

TABLE 5
THE EFFECT OF ACQUISITIONS ON EXECUTIVE COMPENSATION: RESULTS FOR THE OVERALL SAMPLE AND THE IMPACT OF RELATIVE AND ABSOLUTE TARGET SIZE

	(1)	(2)	(3)	(4)	(5)
Intercept	0.051***	0.052***	0.027**	0.050***	0.031***
	(4.58)	(4.67)	(2.49)	(4.51)	(2.77)
Δ ln Pay $_{it-1}$	0.372***	0.363***	0.368***	0.378***	0.378***
	(24.94)	(24.27)	(24.49)	(25.85)	(25.53)
Δ ln Sales $_{it}$	0.112***	0.109***	0.111***	0.112***	0.114***
	(23.18)	(22.34)	(22.89)	(23.02)	(23.75)
Δ ROA $_{it}$	0.035	0.029	0.035	0.036*	0.039*
	(1.59)	(1.32)	(1.62)	(1.66)	(1.77)
Δ MTBV $_{it}$	0.000	0.000	0.000	0.000	0.000
	-(0.70)	-(0.91)	-(0.74)	-(0.70)	-(0.62)
Acquisition $_{it+2}$	0.016**	0.015*	0.017	0.017	0.007
	(2.09)	(1.73)	(1.56)	(1.26)	(0.27)
Acquisition $_{it+1}$	0.015*	0.010	0.016	0.002	0.020
	(1.87)	(1.12)	(1.49)	(0.12)	(0.72)
Acquisition $_{it}$	0.025***	0.003	0.053***	-0.004	0.071***
	(3.25)	(0.30)	(5.17)	-(0.29)	(2.61)
Acquisition $_{it-1}$	0.004	-0.011	0.012	-0.003	0.009
	(0.47)	-(1.27)	(1.12)	-(0.20)	(0.34)
Acquisition $_{it-2}$	-0.025***	-0.004	-0.047***	0.014	-0.076***
	-(3.30)	-(0.41)	-(4.41)	(0.97)	-(2.69)
Acquisition relative size $_{it+2}$		0.004			
		(0.31)			
Acquisition relative size $_{it+1}$		0.011			
		(0.95)			
Acquisition relative size $_{it}$		0.061***			
		(5.37)			
Acquisition relative size $_{it-1}$		0.044***			
		(3.76)			
Acquisition relative size $_{it-2}$		-0.054***			
		-(4.43)			
Acquisition size $_{it+2}$				0.000	
				-(0.13)	
Acquisition size $_{it+1}$				0.004	
				(1.12)	
Acquisition size $_{it}$				0.009**	
				(2.47)	
Acquisition size $_{it-1}$				0.002	
				(0.45)	
Acquisition size $_{it-2}$				-0.013***	
				-(3.43)	
Year dummies	Yes	Yes	Yes	Yes	Yes
Sargan (*p*-value)	0.4609	0.5901	0.5692	0.4340	0.4796
Serial correlation (*p*-value)	0.2032	0.2217	0.2012	0.1590	0.1624
No. of observations	19,565	19,565	19,565	19,565	19,565

Note: Absolute value of *t*-statistics in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%. Column (3) includes all acquisitions with a relative size of greater than 20%. Column (5) includes all acquisitions with an absolute size in terms of target size of greater than £500m.

We now examine whether this conclusion depends on the size of the target company, both in relation to the acquirer and in absolute terms. If size increases associated with acquisition growth are rewarded more highly than size increases associated with internal growth, then the larger the acquisition size (and the relative size) the more positive the effect on pay.

Firstly, we examine the effect of the relative size of the acquisition. Column (2) of Table 5 shows the results of a regression which relative size is included as an explanatory variable. The relative size coefficient is significantly positive in the year following completion and the subsequent year. However, for the third year following completion it is significantly negative. Acquisition relative size therefore determines both the pay increase in the acquisition year and also the subsequent decline in pay. Column (3) reports the results for a regression in which the acquisition dummy variables employed only include acquisitions with a relative size greater than 20%. The pre-merger year coefficients are similar to those in Column (1) but statistically insignificant. However, the coefficient for the acquisition year is significantly positive and much larger than in Column (1). It is significantly different from the coefficients for the two years prior to acquisition. Again, the coefficient for the third year following completion is significantly negative.

Secondly, we examine how pay changes around acquisition are related to the overall sales change of the acquirer, and the acquired sales of the target. This approach is similar to that of Girma et al. (2006), who dissect annual sales changes into those associated with acquired sales and internally generated sales. Target company sales data is available for only a subset (2,238) of the sample acquisitions. To estimate sales for the remaining 2,290 targets for which sales is unavailable, we firstly estimate the median transaction value to sales multiple for the 2,238 acquisitions, which is equal to 0.89. Secondly, for the other targets we divide their transaction value by 0.89 for the estimated sales value.[13] The results are reported in Column (4) of Table 5. The coefficient for acquired sales is significantly positive for the acquisition year, and significantly negative for the third year following acquisition. Since this regression already includes the change in acquirer sales, size increases through acquisition are clearly rewarded significantly more than size increases through internal growth,[14] consistent with Girma et al., (2006). Column (5) reports the results for a regression in which the acquisition dummy variables employed only include acquisitions with an absolute size of sales greater than £500m. The coefficient for the acquisition year is significantly positive and significantly larger than the coefficients for the two years prior to acquisition, whilst the coefficient for the third year is significantly negative.

Therefore, acquisitions beyond a certain relative and absolute size have a significantly positive impact in the acquisition year, even relative to the positive pre-merger trend. However, the pay increase in year of acquisition appears to reverse consistently two years later. This suggests that the initial increase is a transitory one. One reason could be that the increase represents an increase in bonus and not salary. This explanation would be consistent with the US evidence of Grinstein and Hribar (2004) who show that pay increases following mergers tend to be one off bonus payments.[15]

A potential selection bias exists in our regressions because acquiring firms are not chosen at random from the firm population. A specification error will exist if the omitted variables that determine whether a firm acquires another firm are correlated with those that determine the pay increase. To address this we use the Heckman (1979) correction. We first run a probit regression for all sample firms to model the probability that a firm will undertake an acquisition. Our explanatory variables are pre-merger sales, market to book ratio, ROA, dummy variable for whether the firm acquired another firm in the previous year, the announcement share return of that acquisition (further described below), and year dummies. We use the probit estimates to construct the Heckman variable, which when added to equation (2), corrects for a potential correlation between the error term in the probit regression and the error term in equation (2). We include the Heckman variable for the regressions in Columns (1) and (3) of Table 5. This variable is insignificantly positive and significantly positive respectively in the two regressions. However, the acquisition dummy variables are of the same magnitude and statistical significance as in Table 5, suggesting that our results are robust to any specification error.

Does target nationality and organizational form have an impact on acquisition pay awards?

In order to examine whether a differential impact on pay exists between private and public acquisitions, we employ an additional set of dummy variables (Acquisition public $_{it}$) which are set equal to one if the acquisition is public, zero otherwise. Again, we include these variables for each of the five years surrounding acquisition as in Table 5 above. The importance of acquisition size in determining pay changes was displayed above, and we subsequently control for relative size in the rest of the analysis. The results are reported in Column (1) of Table 6 below. The coefficients for the public acquisition dummy variable are not significant for any of the years surrounding acquisition. In order to check the robustness of this finding, in Column (4) we restrict all acquisitions to be greater than 20% in terms of relative size. Again, the coefficients are not significant. There does not, therefore, appear to be a significant difference between private and public acquisitions in terms of executive pay impacts.

TABLE 6
THE EFFECT OF ACQUISITIONS ON EXECUTIVE COMPENSATION: THE IMPACT OF PUBLIC VS. PRIVATE AND CROSS-BORDER VS. DOMESTIC

	All acquisitions			Acquisitions with relative size >20%		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.051***	0.052***	0.051***	0.028***	0.028***	0.028***
	(4.61)	(4.68)	(4.61)	(2.53)	(2.56)	(2.53)
Δ ln Pay $_{it-1}$	0.366***	0.362***	0.365***	0.366***	0.362***	0.364***
	(24.57)	(24.16)	(24.48)	(24.40)	(24.07)	(24.34)
Δ ln Sales $_{it}$	0.109***	0.109***	0.109***	0.109***	0.109***	0.108***
	(22.29)	(22.35)	(22.29)	(22.30)	(22.35)	(22.27)
Δ ROA $_{it}$	0.029	0.029	0.029	0.031	0.031	0.031
	(1.31)	(1.32)	(1.32)	(1.43)	(1.42)	(1.44)
Δ MTBV $_{it}$	0.000	0.000	0.000	0.000	0.000	0.000
	-(0.89)	-(0.89)	-(0.88)	-(0.89)	-(0.86)	-(0.86)
Acquisition $_{it+2}$	0.014	0.006	0.005	0.014	0.012	0.012
	(1.57)	(0.58)	(0.45)	(0.92)	(0.72)	(0.70)
Acquisition $_{it+1}$	0.007	0.011	0.008	0.002	0.001	-0.006
	(0.77)	(1.13)	(0.80)	(0.13)	(0.04)	-(0.32)
Acquisition $_{it}$	0.002	-0.003	-0.004	0.016	0.008	0.005
	(0.24)	-(0.34)	-(0.39)	(1.08)	(0.56)	(0.34)
Acquisition $_{it-1}$	-0.013	-0.010	-0.012	-0.020	-0.015	-0.014
	-(1.41)	-(1.03)	-(1.16)	-(1.35)	-(0.99)	-(0.87)
Acquisition $_{it-2}$	-0.002	0.011	0.014	-0.020	-0.001	-0.003
	-(0.20)	(1.08)	(1.28)	-(1.27)	-(0.08)	-(0.19)
Acquisition relative size $_{it+2}$	0.004	0.005	0.005	0.004	0.003	0.004
	(0.30)	(0.41)	(0.39)	(0.26)	(0.24)	(0.27)
Acquisition relative size $_{it+1}$	0.009	0.011	0.009	0.011	0.013	0.012
	(0.75)	(0.94)	(0.74)	(0.78)	(0.95)	(0.88)
Acquisition relative size $_{it}$	0.061***	0.061***	0.061***	0.052***	0.054***	0.053***
	(5.25)	(5.40)	(5.26)	(3.95)	(4.12)	(4.06)
Acquisition relative size $_{it-1}$	0.042***	0.045***	0.043***	0.049***	0.049***	0.049***
	(3.56)	(3.80)	(3.60)	(3.66)	(3.64)	(3.61)
Acquisition relative size $_{it-2}$	-0.052***	-0.056***	-0.054***	-0.045***	-0.046***	-0.046***
	-(4.20)	-(4.60)	-(4.34)	-(3.11)	-(3.20)	-(3.22)
Acquisition public $_{it+2}$	0.003		0.006	-0.001		-0.001
	(0.20)		(0.33)	-(0.06)		-(0.03)
Acquisition public $_{it+1}$	0.017		0.017	0.020		0.021
	(1.01)		(1.02)	(0.94)		(0.99)
Acquisition public $_{it}$	0.003		0.004	0.009		0.011
	(0.16)		(0.25)	(0.44)		(0.52)
Acquisition public $_{it-1}$	0.011		0.010	-0.002		-0.002
	(0.63)		(0.63)	-(0.09)		-(0.11)
Acquisition public $_{it-2}$	-0.014		-0.017	0.009		0.007
	-(0.82)		-(0.97)	(0.41)		(0.30)
Acquisition cross-border $_{it+2}$		0.025*	0.026*		0.007	0.006
		(1.76)	(1.77)		(0.31)	(0.28)
Acquisition cross-border $_{it+1}$		-0.005	-0.004		0.019	0.020
		-(0.32)	-(0.27)		(0.87)	(0.91)
Acquisition cross-border $_{it}$		0.018	0.018		0.028	0.028
		(1.27)	(1.25)		(1.35)	(1.34)
Acquisition cross-border $_{it-1}$		-0.005	-0.005		-0.017	-0.018
		-(0.36)	-(0.35)		-(0.81)	-(0.83)
Acquisition cross-border $_{it-2}$		-0.044***	-0.046***		-0.050**	-0.051**
		-(2.94)	-(3.02)		-(2.22)	-(2.23)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Sargan (*p*-value)	0.5763	0.6150	0.6031	0.5984	0.6448	0.6365
Serial correlation (*p*-value)	0.2061	0.2264	0.2099	0.2004	0.2114	0.1968
No. of observations	19,565	19,565	19,565	19,565	19,565	19,565

Note: Absolute value of *t*-statistics in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%. Columns (1) to (3) include all acquisitions with a relative size of 5% and greater. Columns (3) to (6) include all acquisitions with a relative size of greater than 20%.

In order to examine whether domestic and cross-border acquisitions have differential pay impacts, we employ a set of dummy variables (Acquisition cross-border $_{it}$) which are set equal to one if the acquisition is cross-border, zero if domestic. In Column (2) of Table 6, we report the results of these regressions. The only coefficient that is significant (at the five percent level) is for the third year following acquisition (significantly negative). The same result holds when we restrict all acquisitions to be greater than 20% in terms of relative size, as shown in Column (5). In Columns (3) and (6) of Table 5 we include dummy variables for both cross-border and public acquisitions. However, this makes no difference to our conclusions regarding the pay impact of cross-border versus domestic (or public versus private) acquisitions. Therefore, the only difference that we find between cross-border and domestic acquisitions is that the former experience a significantly greater decline in pay in the second year following acquisition.[16] This finding runs contrary to the hypotheses described in the Introduction, which predict that cross-border deals will have more positive pay impacts than domestic acquisitions. However, these hypotheses predict that specific types of cross-border acquisitions will have larger pay impacts than others, and we therefore examine such types in more detail.

One may expect initial cross-border acquisitions by firms to have larger pay impacts, since initial cross-border acquisitions may have a marginally greater impact on the multinational nature and complexity of the firm, compared to subsequent cross-border acquisitions. In order to examine this, we employ a dummy variable which is equal to one if an acquisition is the first cross-border acquisition carried out by a acquiring company, zero otherwise. The results, reported in Column (1) of Table 7 below, show that the coefficient for the acquisition year is insignificantly positive. In Column (4) we restrict all acquisitions to be greater than 20% in terms of relative size. In this case, the coefficient for the acquisition year is significantly positive. Other coefficients are insignificant. Therefore, for relatively large acquisitions, initial cross-border acquisitions result in significantly higher changes than subsequent cross-border acquisitions. To ensure that this is not a general bid order effect, we repeat the analysis for initial domestic acquisitions, but find no similar effect.[17] Since previous pay studies that examine the impact of multi-nationality do not examine different forms of geographic expansion, these results improve our understanding of the mechanism through which international exposure affects pay.

TABLE 7
THE EFFECT OF ACQUISITIONS ON EXECUTIVE COMPENSATION: THE IMPACT OF CROSS-BORDER ACQUISITION ORDER, TARGET NATIONALITY, AND TARGET EXECUTIVE PAY

	All acquisitions			Acquisitions with relative size >20%		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.051***	0.051***	0.051***	0.028***	0.028***	0.027**
	(4.61)	(4.61)	(4.59)	(2.58)	(2.53)	(2.47)
Δ ln Pay $_{it-1}$	0.364***	0.364***	0.364***	0.362***	0.364***	0.364***
	(24.36)	(24.46)	(24.41)	(24.12)	(24.32)	(24.25)
Δ ln Sales $_{it}$	0.109***	0.109***	0.108***	0.108***	0.108***	0.108***
	(22.30)	(22.28)	(22.27)	(22.26)	(22.28)	(22.27)
Δ ROA $_{it}$	0.029	0.029	0.028	0.031	0.031	0.031
	(1.35)	(1.32)	(1.30)	(1.45)	(1.44)	(1.42)
Δ MTBV $_{it}$	0.000	0.000	0.000	0.000	0.000	0.000
	-(0.91)	-(0.88)	-(0.85)	-(0.88)	-(0.87)	-(0.87)
Acquisition $_{it+2}$	0.005	0.005	0.005	0.013	0.012	0.012
	(0.47)	(0.46)	(0.43)	(0.77)	(0.71)	(0.68)
Acquisition $_{it+1}$	0.008	0.008	0.008	-0.006	-0.006	-0.007
	(0.75)	(0.79)	(0.71)	-(0.32)	-(0.32)	-(0.42)
Acquisition $_{it}$	-0.004	-0.004	-0.004	0.005	0.005	0.004
	-(0.36)	-(0.39)	-(0.43)	(0.31)	(0.34)	(0.26)
Acquisition $_{it-1}$	-0.013	-0.012	-0.011	-0.015	-0.014	-0.013
	-(1.20)	-(1.17)	-(1.06)	-(0.91)	-(0.85)	-(0.77)
Acquisition $_{it-2}$	0.014	0.013	0.014	-0.004	-0.004	-0.003
	(1.28)	(1.27)	(1.28)	-(0.25)	-(0.22)	-(0.16)
Acquisition relative size $_{it+2}$	0.005	0.005	0.005	0.003	0.004	0.004
	(0.38)	(0.39)	(0.41)	(0.21)	(0.25)	(0.27)
Acquisition relative size $_{it+1}$	0.009	0.009	0.010	0.012	0.012	0.014
	(0.76)	(0.74)	(0.84)	(0.86)	(0.89)	(0.99)
Acquisition relative size $_{it}$	0.061***	0.061***	0.061***	0.054***	0.054***	0.055***
	(5.24)	(5.26)	(5.29)	(4.08)	(4.07)	(4.18)
Acquisition relative size $_{it-1}$	0.043***	0.043***	0.041***	0.049***	0.048***	0.046***
	(3.62)	(3.60)	(3.42)	(3.64)	(3.59)	(3.43)
Acquisition relative size $_{it-2}$	-0.054***	-0.054***	-0.054***	-0.046***	-0.046***	-0.047***
	-(4.33)	-(4.35)	-(4.34)	-(3.18)	-(3.23)	-(3.24)
Acquisition public $_{it+2}$	0.006	0.005	0.011	-0.001	-0.001	0.002
	(0.34)	(0.30)	(0.61)	-(0.05)	-(0.05)	(0.11)
Acquisition public $_{it+1}$	0.017	0.017	0.024	0.020	0.021	0.029
	(1.00)	(1.02)	(1.35)	(0.94)	(0.96)	(1.28)
Acquisition public $_{it}$	0.005	0.004	0.012	0.014	0.011	0.023
	(0.29)	(0.25)	(0.68)	(0.66)	(0.51)	(1.06)
Acquisition public $_{it-1}$	0.010	0.011	-0.011	-0.003	-0.002	-0.027
	(0.62)	(0.66)	-(0.60)	-(0.14)	-(0.11)	-(1.18)
Acquisition public $_{it-2}$	-0.017	-0.016	-0.011	0.008	0.008	0.011
	-(0.95)	-(0.94)	-(0.58)	(0.34)	(0.35)	(0.47)
Acquisition cross-border $_{it+2}$	0.013	0.017	0.026*	0.017	0.004	0.007
	(0.68)	(0.90)	(1.79)	(0.60)	(0.14)	(0.31)
Acquisition cross-border $_{it+1}$	0.012	-0.006	-0.003	0.025	-0.009	0.020
	(0.64)	-(0.33)	-(0.21)	(0.86)	-(0.32)	(0.93)
Acquisition cross-border $_{it}$	-0.002	0.019	0.020	-0.020	0.031	0.029
	-(0.11)	(1.04)	(1.39)	-(0.70)	(1.11)	(1.40)
Acquisition cross-border $_{it-1}$	0.002	0.001	-0.007	-0.006	-0.008	-0.020
	(0.09)	(0.07)	-(0.46)	-(0.21)	-(0.27)	-(0.93)
Acquisition cross-border $_{it-2}$	-0.050**	-0.042**	-0.045***	-0.085***	-0.041	-0.050**
	-(2.36)	-(2.15)	-(2.96)	-(2.59)	-(1.32)	-(2.21)
Acquisition 1st cross-border $_{it+2}$	0.026			-0.024		
	(1.06)			-(0.66)		

Acquisition 1st cross-border $_{it+1}$	-0.028			-0.012		
	-(1.20)			-(0.33)		
Acquisition 1st cross-border $_{it}$	0.036			0.082**		
	(1.58)			(2.43)		
Acquisition 1st cross-border $_{it-1}$	-0.007			-0.011		
	-(0.29)			-(0.31)		
Acquisition 1st cross-border $_{it-2}$	0.009			0.062		
	(0.34)			(1.60)		
Acquisition US $_{it+2}$		0.017			0.003	
		(0.71)			(0.08)	
Acquisition US $_{it+1}$		0.004			0.054	
		(0.19)			(1.52)	
Acquisition US $_{it}$		-0.002			-0.004	
		-(0.08)			-(0.12)	
Acquisition US $_{it-1}$		-0.013			-0.019	
		-(0.54)			-(0.54)	
Acquisition US $_{it-2}$		-0.006			-0.019	
		-(0.25)			-(0.49)	
Acquisition high pay $_{it+2}$			-0.038			-0.022
			-(0.92)			-(0.46)
Acquisition high pay $_{it+1}$			-0.040			-0.042
			-(1.00)			-(0.89)
Acquisition high pay $_{it}$			-0.054			-0.082*
			-(1.39)			-(1.78)
Acquisition high pay $_{it-1}$			0.141***			0.153***
			(3.53)			(3.21)
Acquisition high pay $_{it-2}$			-0.044			-0.033
			-(1.00)			-(0.62)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Sargan (*p*-value)	0.5985	0.5966	0.6189	0.6341	0.6373	0.6505
Serial correlation (*p*-value)	0.2199	0.2123	0.2071	0.2154	0.1955	0.1978
No. of observations	19,565	19,565	19,565	19,565	19,565	19,565

Note: Absolute value of *t*-statistics in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%. Columns (1) to (3) include all acquisitions with a relative size of 5% and greater. Columns (4) to (6) include all acquisitions with a relative size of greater than 20%.

One of the hypotheses advanced for higher pay impacts in cross-border deals is that cross-border acquisitions of targets in countries with relatively high pay will result in higher pay changes. To test this, we examine the differential impact of cross-border acquisitions of US targets, since the US has substantially higher pay levels than the UK and represents a significant proportion of the sample. We employ a dummy variable that is given the value one for US acquisitions, zero otherwise. The results, reported in Column (2) of Table 7, show that none of the coefficients for this variable are significant. Column (5) reports results for acquisitions which are greater than 20% in terms of relative size, yet the results are the same. We therefore find no evidence that cross-border acquisitions of targets in high pay countries result in higher pay changes than other cross-border acquisitions.

We examine the key assumption underlying this hypothesis by examining the impact of target executive pay levels on acquirer pay impacts. Target pay data is only available for UK public targets (collected from Datastream) and US public target data (collected from 14A company filings on the SEC Edgar Database). We collect the highest paid director's cash compensation (salary and bonus) for 527 UK public targets and 41 US public targets. For every deal year, we create a dummy variable which is set equal to one if the target highest director pay is higher than the acquirer's highest director pay, zero otherwise. Of the 568 acquisitions with data available, 112 have target pay greater than the acquirer pay. The results are shown in Column (3) of Table 7. The coefficient for this dummy variable for the second year following acquisition is significantly positive, whilst coefficients for other years are statistically insignificant. Column (6) reports regressions for acquisitions which are greater than 20% in terms of relative size. The results are again very similar. This evidence is consistent with the hypothesis that where the acquirer's level of pay is lower than that of the acquiree, there is a tendency for the acquirer's pay to gravitate towards the acquiree's levels following acquisition

Are CEOs really motivated to carry out (bad) acquisitions by executive pay considerations?

In this section, we examine whether acquisition propensity is influenced by prior acquisition pay awards and whether executive pay and CEO wealth increases following poor acquisitions.

If CEOs carry out acquisitions in order to increase pay, then it follows that those CEOs who have been most highly compensated for past acquisitions may be more likely to make future acquisitions. We estimate a logit model in which the dependent variable is one if a firm carries out an acquisition in the next financial year, zero otherwise. We include sales, profitability, and MTBV as independent variables since previous studies show they impact positively on acquisition propensity (Hughes, 1989). We allow for the fact that some firms are predisposed to make acquisitions by including a dummy variable set equal to one if there is an acquisition in the current year, zero otherwise. The quality of a previous merger may affect acquisition propensity and we therefore include current year acquisition performance, measured as the cumulative announcement returns (CARs) to the acquiring firm for the 3-day period (-1, 1) around the announcement date (see e.g., Girma et al., 2006), where the benchmark return is the Datastream equal weighted market index. If there is more than one acquisition within the year, we use the sum of CARs. We use two compensation measures as explanatory variables. Firstly, we estimate equation (2) without the acquisition variables, and use the residuals as a measure of abnormal compensation (*Abnormal pay*). Secondly, to measure prior

acquisition abnormal pay we use *abnormal pay* if there is an acquisition in the current year, zero otherwise (*Abnormal pay * acquisition*). The equation we estimate is as follows;

$$\begin{aligned} Acquisition_{it+1} &= \beta_0 + \beta_1 \ln Sales_{it} + \beta_2 ROA_{it} + \beta_3 MTBV_{it} \\ &+ \beta_4 Acquisition_{it} + \beta_5 CAR_{it} + \beta_6 Abnormal\ pay_{it} \\ &+ \beta_7 Abnormal\ pay_{it} * acquisition_{it} + h_{it} + e_{it} \end{aligned} \quad (3)$$

The results, reported in Column (1) of Table 8, show that future acquisition activity is significantly positively related to prior sales, ROA, MTBV, CAR, prior abnormal pay and abnormal pay associated with acquisitions. In Column (3) we rerun the regressions for acquisitions in which relative size is greater than 20%. In this case, the coefficient on *Abnormal pay * acquisition* is not statistically significant. Therefore our results are not conclusive here.

TABLE 8
THE EFFECT OF EXECUTIVE COMPENSATION ON ACQUISITION PROPENSITY

	All acquisitions		Acquisitions with relative size >20%	
	Acquisition $_{it+1}$	Relative size $_{it+1}$	Acquisition $_{it+1}$	Relative size $_{it+1}$
	(1)	(2)	(3)	(4)
Intercept	-3.655***	0.050***	-5.274***	0.052***
	-(20.85)	(3.99)	-(8.86)	(4.14)
ln Sales $_{it}$	0.066***	-0.002**	0.020*	-0.002***
	(7.15)	-(2.21)	(1.69)	-(2.76)
ROA $_{it}$	0.708***	-0.131**	-0.489**	-0.138***
	(3.93)	-(8.66)	-(2.42)	-(9.14)
MTBV $_{it}$	0.008**	0.000	-0.003	0.000
	(2.07)	(0.24)	-(0.64)	(0.04)
Acquisition $_{it}$	0.781***	0.037***	0.915***	0.046***
	(12.72)	(5.47)	(9.14)	(5.01)
CAR $_{it}$	2.139***	0.138*	2.074**	0.137
	(3.52)	(1.87)	(2.45)	(1.54)
Abnormal pay $_{it}$	0.601***	0.010	0.779***	0.020
	(3.22)	(0.58)	(3.40)	(1.19)
Abnormal pay $_{it}$ * acquisition $_{it}$	0.775**	0.213***	0.392	0.221***
	(2.34)	(5.79)	(0.88)	(5.03)
Year dummies	Yes	Yes	Yes	Yes
R^2	0.0577	0.0198	0.0411	0.0176
No. of observations	17,522	17,522	17,522	17,522

Note: Absolute value of *t*-statistics in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%. Columns (1)-(2) include all acquisitions with a relative size of 5% and greater. Columns (3)-(4) include all acquisitions with a relative size of greater than 20%.

In order to examine this further we use as our dependent variable not whether an acquisition is made in the subsequent year but the relative size of that acquisition. The results are reported in Columns (2) and (4) of Table 8. In this case the coefficient for *Abnormal pay * acquisition* is always significantly positive, suggesting that acquirers who earn high abnormal pay from prior acquisitions are more likely to carry out relatively large future deals. This evidence overall is consistent with Rosen (2004), who finds that excess pay associated with prior mergers results in a higher likelihood of future acquisitions.

To examine whether acquirer CEOs are rewarded differently for good and bad acquisitions we firstly employ a dummy variable that is set equal to one if the acquisition has a negative CAR, zero otherwise.[18] We include this variable for both the acquisition year and the subsequent two years to allow for lag effects. The results, reported in Column (1) of Table 9 below, show that these coefficients are all statistically insignificant. The results in Column (4), for which all acquisitions must be greater than 20% in terms of relative size, are similar. Secondly, Columns (2) and (3), report the pay impacts for those acquisitions which have a negative CAR, both with and without controlling for relative size, respectively. In both columns there is a significantly positive effect on pay in the year following acquisition, and a significantly negative effect two years after acquisition. Columns (5) and (6) show similar results for those acquisitions which are greater than 20% in terms of relative size. These results for negative CAR acquisitions are very similar to those for the overall sample of acquisitions.[19] We therefore find no difference in pay impacts between good and bad acquisitions, and pay impacts are significantly positive for both wealth creative and wealth destructive acquisitions.[20] This finding has important implications for the motivations of CEOs carrying out acquisitions, since CEOs appear able to increase their pay, even if acquisitions destroy shareholder value.

TABLE 9
THE EFFECT OF ACQUISITIONS ON EXECUTIVE COMPENSATION: THE IMPACT OF ACQUISITION PERFORMANCE

	All acquisitions			Acquisitions with relative size >20%		
	All acquisitions	Acquisitions with negative CAR		All acquisitions	Acquisitions with negative CAR	
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.052***	0.031***	0.028***	0.028***	0.029***	0.028***
	(4.67)	(2.78)	(2.59)	(2.55)	(2.68)	(2.56)
Δ ln Pay $_{it-1}$	0.363***	0.373***	0.370***	0.363***	0.371***	0.369***
	(24.28)	(24.97)	(24.56)	(24.14)	(24.75)	(24.45)
Δ ln Sales $_{it}$	0.109***	0.114***	0.112***	0.109***	0.113***	0.111***
	(22.32)	(23.58)	(22.99)	(22.36)	(23.46)	(22.97)
Δ ROA $_{it}$	0.029	0.037*	0.033	0.031	0.037*	0.034
	(1.34)	(1.69)	(1.50)	(1.44)	(1.69)	(1.55)
Δ MTBV $_{it}$	0.000	0.000	0.000	0.000	0.000	0.000
	-(0.90)	-(0.65)	-(0.77)	-(0.89)	-(0.70)	-(0.77)
Acquisition $_{it+2}$	0.015*	0.004	0.002	0.014	0.016	0.018
	(1.73)	(0.39)	(0.14)	(0.96)	(1.06)	(0.85)
Acquisition $_{it+1}$	0.010	0.013	0.007	0.008	0.009	-0.004
	(1.12)	(1.22)	(0.58)	(0.55)	(0.61)	-(0.19)
Acquisition $_{it}$	0.005	0.021**	0.000	0.017	0.054***	0.029
	(0.51)	(2.07)	(0.02)	(1.12)	(3.75)	(1.51)
Acquisition $_{it-1}$	-0.018*	0.016	0.005	-0.030*	0.025*	0.003
	-(1.76)	(1.52)	(0.47)	-(1.87)	(1.72)	(0.16)
Acquisition $_{it-2}$	0.003	-0.033***	0.004	-0.008	-0.057***	0.009
	(0.32)	-(3.06)	(0.28)	-(0.47)	-(3.74)	(0.44)
Acquisition relative size $_{it+2}$	0.004		0.006	0.004		-0.005
	(0.32)		(0.31)	(0.25)		-(0.23)
Acquisition relative size $_{it+1}$	0.011		0.011	0.012		0.017
	(0.95)		(0.66)	(0.85)		(0.87)
Acquisition relative size $_{it}$	0.061***		0.050***	0.052***		0.033*
	(5.37)		(3.10)	(3.99)		(1.75)
Acquisition relative size $_{it-1}$	0.043***		0.035***	0.049		0.035***
	(3.70)		(3.28)	(3.62)		(3.11)
Acquisition relative size $_{it-2}$	-0.054***		-0.090***	-0.043***		-0.092***
	-(4.38)		-(5.33)	-(3.01)		-(4.69)
Acquisition CAR<0 $_{it}$	-0.006			0.002		
	-(0.45)			(0.10)		
Acquisition CAR<0 $_{it-1}$	0.017			0.022		
	(1.27)			(1.14)		
Acquisition CAR<0 $_{it-2}$	-0.017			-0.021		
	-(1.19)			-(1.02)		
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Sargan (*p*-value)	0.5899	0.4897	0.5749	0.6134	0.5533	0.5944
Serial correlation (*p*-value)	0.2259	0.1925	0.2230	0.2162	0.1918	0.2338
No. of observations	19,565	19,565	19,565	19,565	19,565	19,565

Note: Absolute value of *t*-statistics in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%. Columns (1) to (3) include all acquisitions with a relative size of 5% and greater. Columns (4) to (6) include all acquisitions with a relative size of greater than 20%. In addition, Columns (1) and (4) include all acquisitions, whilst Columns (2) to (3) and (5) to (6) include all acquisitions with negative CARs.

Despite this, CEOs may not be motivated to make poor acquisitions if there is an offsetting negative effect on the value of their own shareholdings, and we therefore examine the overall effect on both pay and the value of shares and incentive shares. Information on shareholdings for a subset of acquisitions (1,001 sample acquisitions between 1989 and 1998) is drawn from a dataset employed for the development of a separate paper (Conn et al., 2004), which contains the number of shares and incentive shares owned by CEOs in the last financial year prior to the first acquisition in a merger series. A merger series is defined as one or more mergers followed by a period of at least 36 months with no mergers. To estimate the impact on share value, we firstly multiply the acquirer's market value (at year beginning) by the acquisition CAR, and then multiply this by the percentage of shares owned. To estimate the impact on incentive share value, we multiply the former value by the percentage of incentive shares owned. We therefore assume that a 1% increase (decrease) in share value will increase (decrease) incentive shares by 1%. Our estimation of the change in pay due to acquisition is *Abnormal pay*, as described above. To estimate the abnormal change in sterling (rather than logs), we multiply the inverse of *Abnormal pay* by Pay $_{t-1}$, and subtract Pay $_{t-1.}$ The impact on overall wealth is the sum of the pay change in the acquisition year and the change in the value of share and incentive shares. The results for all acquisitions are shown in Panel A of Table 10, whilst those with a relative size of greater than 20% are shown in Panel B.

TABLE 10
THE EFFECT OF ACQUISITIONS ON CEO WEALTH

		Change in pay	Change in share value	Change in incentive share value	Total change in wealth
Panel A: All acquisitions					
All deals	No. of observations	851	851	851	851
	Mean	21.68***	24.18***	11.75***	57.61***
	Median	12.04***	0.02***	0.00***	17.09***
Negative CAR	No. of observations	343	343	343	343
	Mean	21.90***	-88.64***	-15.86***	-82.59***
	Median	11.82***	-9.15***	-1.50***	-8.81***
Positive CAR	No. of observations	469	469	469	469
	Mean	21.12***	108.65***	33.25***	163.02***
	Median	11.60***	6.38***	2.96***	44.54***
Difference	Mean	0.79	-197.29***	-49.11***	-245.61***
	Median	0.22	-15.53***	-4.46***	-53.35***
Panel B: Acquisitions with relative size >20%					
All deals	No. of observations	362	362	362	362
	Mean	19.98***	54.77*	11.68*	86.43***
	Median	11.73***	0.00	0.00	13.19***
Negative CAR	No. of observations	158	158	158	158
	Mean	19.44***	-110.04***	-28.06***	-118.65***
	Median	11.86***	-11.29***	-1.57***	-18.62***
Positive CAR	No. of observations	187	187	187	187
	Mean	18.91***	198.71***	45.42***	263.04***
	Median	10.57***	10.19***	1.12***	46.53***
Difference	Mean	0.53	-308.75***	-73.47***	-381.69***
	Median	1.29	-21.48***	-2.69***	-65.15***

Note: Absolute value of *t*-statistics in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%. Panel A includes all acquisitions with a relative size of 5% and greater. Panel B includes all acquisitions with a relative size of greater than 20%.

For all acquisitions, the average abnormal pay increase in the year of acquisition is £21,680. The average impact on both CEO shareholding value and incentive share value is significantly positive (£24,180 and £11,750 respectively). However, median impacts are much smaller, and are much smaller in size than pay impacts. Results in Panel B are very similar. Results for both panels show no significant difference in pay changes between negative and positive CAR acquisitions. However, negative CAR acquisitions have a significantly negative

effect on the share and incentive share value, which is greater than the pay increase, such that the average (median) impact on overall CEO wealth is a statistically significant -£82,590 (-£8,810). In contrast, positive CAR acquisitions have a significantly positive effect on overall CEO wealth, with an average (median) increase of £163,020 (£44,540). The difference between negative and positive CAR acquisitions is statistically significant. A similar pattern is shown in Panel B. Our results show that CEOs on average suffer a significant decline in wealth from carrying out bad acquisitions.

Are acquisition pay awards the result of weak corporate governance?
We examine whether the pay changes around acquisition are the result of agency problems by examining whether they are larger for acquirers with weak corporate governance. We employ seven corporate governance measures comprising board size, proportion of non-executive directors, CEO tenure as board director, whether the CEO is also chairman, CEO share ownership, board share ownership, and off board ownership. The first two measures, board size and the number of non-executive directors are collected from Datastream. Board size is available for the entire sample, and the number of non-executive directors is available for 14,958 firm year observations. The other five measures are drawn from the dataset employed by Conn et al., (2004) described above.[21]

We test the impact of each governance variable separately on the pay changes around acquisition, by classifying acquirers according to whether they have weak governance as follows; Board size greater than median board size (7) for all sample observations; Acquirer proportion of non-executives less than median (0.40) for 14,958 sample observations; Acquirer CEO tenure greater than median acquirer (3.93 years); Acquirer CEO also Chairman; Acquirer CEO ownership less than median acquirer (0.5%); Acquirer board ownership less than median acquirer (7.6%); Acquirer largest off board holding less than median acquirer (10.0%). We run seven separate regressions identical to Column (2) of Table 5, in which we include an additional dummy variable which is equal to the acquisition dummy variable if the acquirer has weak corporate governance for the particular variable, and zero otherwise. The acquisition dummy variables and relative size variables are only set equal to one and the relative size respectively, if the governance data is available for the firm year observation. The results are reported in Table 11 below. Panel A reports results for all acquisitions, whilst Panel B reports results for acquisitions in which relative size is greater than 20%.

TABLE 11

THE EFFECT OF ACQUISITIONS ON EXECUTIVE COMPENSATION: THE IMPACT OF THE STRENGTH OF CORPORATE GOVERNANCE

Panel A: All Acquisitions

	Board size	Proportion of non-executives	CEO tenure	Chairman-CEO	CEO ownership	Board ownership	External ownership
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	0.052***	0.027**	0.028**	0.033***	0.033***	0.033***	0.033***
	(4.67)	(2.48)	(2.52)	(3.03)	(3.03)	(3.04)	(3.03)
Δ ln Pay $_{it-1}$	0.363***	0.365***	0.371***	0.371***	0.372***	0.369***	0.370***
	(23.96)	(24.26)	(24.85)	(24.48)	(24.61)	(24.45)	(24.44)
Δ ln Sales $_{it}$	0.109***	0.110***	0.112***	0.112***	0.112***	0.112***	0.112***
	(22.31)	(22.53)	(23.02)	(23.11)	(23.04)	(23.08)	(23.15)
Δ ROA $_{it}$	0.029	0.029	0.033	0.032	0.034	0.033	0.033
	(1.33)	(1.33)	(1.51)	(1.48)	(1.55)	(1.49)	(1.50)
Δ MTBV $_{it}$	0.000	0.000	0.000	0.000	-0.001	0.000	0.000
	-(0.91)	-(0.83)	-(0.81)	-(0.91)	-(1.01)	-(0.90)	-(0.92)
Acquisition $_{it+2}$	0.026**	0.010	-0.011	0.010	0.004	-0.012	0.020
	(2.37)	(0.86)	-(0.53)	(0.57)	(0.17)	-(0.61)	(1.03)
Acquisition $_{it+1}$	-0.001	0.003	-0.009	-0.013	0.003	-0.005	0.012
	-(0.08)	(0.30)	-(0.46)	-(0.80)	(0.13)	-(0.27)	(0.66)
Acquisition $_{it}$	-0.001	0.014	-0.024	-0.016	-0.041**	-0.016	-0.034*
	-(0.08)	(1.32)	-(1.28)	-(1.03)	-(2.12)	-(0.91)	-(1.93)
Acquisition $_{it-1}$	-0.012	-0.015	-0.006	-0.003	0.013	0.015	-0.002
	-(1.10)	-(1.33)	-(0.32)	-(0.21)	(0.69)	(0.92)	-(0.11)
Acquisition $_{it-2}$	0.006	-0.014	0.010	-0.002	0.011	0.003	0.000
	(0.49)	-(1.25)	(0.50)	-(0.10)	(0.56)	(0.18)	(0.02)
Acquisition relative size $_{it+2}$	0.002	0.013	0.036	0.015	0.034	0.017	0.013
	(0.13)	(0.97)	(1.35)	(0.78)	(1.50)	(0.85)	(0.68)
Acquisition relative size $_{it+1}$	0.013	0.010	-0.010	-0.006	-0.037	-0.006	-0.007
	(1.09)	(0.80)	-(0.36)	-(0.29)	-(1.65)	-(0.30)	-(0.37)
Acquisition relative size $_{it}$	0.061***	0.056***	0.106***	0.085***	0.132***	0.085***	0.087***
	(5.39)	(4.74)	(4.16)	(4.59)	(6.22)	(4.59)	(4.68)
Acquisition relative size $_{it-1}$	0.045***	0.044***	-0.003	0.024	-0.013	0.024	0.024
	(3.80)	(3.73)	-(0.13)	(1.31)	-(0.64)	(1.32)	(1.31)
Acquisition relative size $_{it-2}$	-0.056***	-0.052***	-0.095***	-0.060***	-0.063***	-0.060***	-0.060***
	-(4.58)	-(4.09)	-(3.81)	-(3.21)	-(2.99)	-(3.20)	-(3.22)
Acquisition weak governance $_{it+2}$	-0.024	0.006	0.017**	-0.038	-0.003	0.017	-0.044*
	-(1.63)	(0.35)	(2.15)	-(1.46)	-(0.13)	(0.70)	-(1.80)
Acquisition weak governance $_{it+1}$	0.024	0.012	0.016**	0.040	-0.012	0.010	-0.024
	(1.57)	(0.75)	(1.98)	(1.57)	-(0.46)	(0.40)	-(1.02)
Acquisition weak governance $_{it}$	0.008	-0.021	0.022***	0.003	0.036	0.002	0.037*
	(0.52)	-(1.36)	(2.69)	(0.15)	(1.48)	(0.11)	(1.67)
Acquisition weak governance $_{it-1}$	0.003	0.003	0.006	0.009	-0.025	-0.032	0.004
	(0.16)	(0.17)	(0.77)	(0.39)	-(1.02)	-(1.51)	(0.19)
Acquisition weak governance $_{it-2}$	-0.019	0.023	-0.024***	-0.003	-0.023	-0.012	-0.005
	-(1.27)	(1.44)	-(2.91)	-(0.12)	-(0.91)	-(0.52)	-(0.24)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sargan (*p*-value)	0.5898	0.5589	0.4872	0.5735	0.5534	0.5638	0.5615
Serial correlation (*p*-value)	0.2338	0.2123	0.1861	0.1725	0.1844	0.1807	0.1732
No. of observations	19,565	19,565	19,565	19,565	19,565	19,565	19,565

Panel B: Acquisitions with relative size >20%							
	Board size	Proportion of non-executives	CEO tenure	Chairman-CEO	CEO ownership	Board ownership	External ownership
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	0.028**	0.028**	0.027**	0.033***	0.033***	0.033***	0.033***
	(2.54)	(2.54)	(2.50)	(3.02)	(3.03)	(3.02)	(3.02)
Δ ln Pay $_{it-1}$	0.362***	0.364***	0.368***	0.370***	0.373***	0.370***	0.370***
	(23.92)	(24.14)	(24.46)	(24.46)	(24.67)	(24.50)	(24.46)
Δ ln Sales $_{it}$	0.109***	0.109***	0.111***	0.112***	0.112***	0.112***	0.112***
	(22.38)	(22.52)	(22.83)	(23.11)	(23.09)	(23.15)	(23.18)
Δ ROA $_{it}$	0.031	0.032	0.034	0.033	0.035	0.034	0.034
	(1.44)	(1.46)	(1.57)	(1.53)	(1.59)	(1.56)	(1.56)
Δ MTBV $_{it}$	0.000	0.000	0.000	-0.001	-0.001	0.000	0.000
	-(0.83)	-(0.83)	-(0.82)	-(0.98)	-(1.03)	-(0.91)	-(0.93)
Acquisition $_{it+2}$	0.025	0.014	-0.056	0.003	-0.037	-0.021	0.005
	(1.50)	(0.78)	-(1.65)	(0.11)	-(1.05)	-(0.66)	(0.14)
Acquisition $_{it+1}$	-0.002	-0.022	-0.011	-0.004	-0.018	-0.021	0.010
	-(0.15)	-(1.27)	-(0.32)	-(0.15)	-(0.53)	-(0.69)	(0.34)
Acquisition $_{it}$	0.004	0.030*	0.004	0.003	-0.008	0.002	0.007
	(0.27)	(1.81)	(0.12)	(0.13)	-(0.26)	(0.06)	(0.24)
Acquisition $_{it-1}$	-0.007	-0.014	-0.049	-0.025	-0.008	0.009	-0.036
	-(0.44)	-(0.86)	-(1.62)	-(1.02)	-(0.28)	(0.33)	-(1.34)
Acquisition $_{it-2}$	-0.011	-0.039***	0.012	-0.012	0.008	-0.003	-0.006
	-(0.66)	-(2.24)	(0.36)	-(0.45)	(0.27)	-(0.09)	-(0.20)
Acquisition relative size $_{it+2}$	0.001	0.009	0.060*	0.031	0.054**	0.032	0.028
	(0.07)	(0.56)	(1.94)	(1.34)	(2.02)	(1.38)	(1.23)
Acquisition relative size $_{it+1}$	0.013	0.017	-0.011	-0.011	-0.031	-0.010	-0.012
	(0.95)	(1.14)	-(0.34)	-(0.48)	-(1.17)	-(0.43)	-(0.51)
Acquisition relative size $_{it}$	0.053***	0.050***	0.087***	0.069***	0.119***	0.068***	0.069***
	(4.08)	(3.71)	(2.94)	(3.14)	(4.76)	(3.12)	(3.15)
Acquisition relative size $_{it-1}$	0.048***	0.048***	0.016	0.040*	-0.003	0.042*	0.041*
	(3.61)	(3.55)	(0.57)	(1.86)	-(0.11)	(1.94)	(1.88)
Acquisition relative size $_{it-2}$	-0.045***	-0.040***	-0.095***	-0.061***	-0.054**	-0.061***	-0.059***
	-(3.17)	-(2.73)	-(3.28)	-(2.76)	-(2.19)	-(2.75)	-(2.69)
Acquisition weak governance $_{it+2}$	-0.026	0.011	0.020*	-0.096**	0.021	-0.014	-0.063*
	-(1.22)	(0.47)	(1.82)	-(2.45)	(0.52)	-(0.38)	-(1.73)
Acquisition weak governance $_{it+1}$	0.025	0.042*	0.020*	0.037	0.010	0.055	-0.006
	(1.15)	(1.89)	(1.78)	(0.95)	(0.26)	(1.55)	-(0.17)
Acquisition weak governance $_{it}$	0.031	-0.029	0.040***	0.036	0.015	0.026	0.015
	(1.55)	-(1.38)	(3.70)	(1.00)	(0.39)	(0.78)	(0.44)
Acquisition weak governance $_{it-1}$	-0.029	-0.014	0.025**	-0.005	-0.021	-0.081**	0.021
	-(1.39)	-(0.66)	(2.26)	-(0.14)	-(0.57)	-(2.51)	(0.65)
Acquisition weak governance $_{it-2}$	-0.011	0.050**	-0.040***	0.038	-0.050	0.006	0.011
	-(0.52)	(2.27)	-(3.51)	(1.08)	-(1.33)	(0.19)	(0.33)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sargan (*p*-value)	0.6186	0.5602	0.5686	0.5835	0.5526	0.5665	0.5708
Serial correlation (*p*-value)	0.2174	0.1995	0.1907	0.1774	0.1818	0.1767	0.1801
No. of observations	19,565	19,565	19,565	19,565	19,565	19,565	19,565

Note: Absolute value of *t*-statistics in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%. Panel A includes all acquisitions with a relative size of 5% and greater. Panel B includes all acquisitions with a relative size of greater than 20%.

There is little evidence that acquirers with weak corporate governance experience larger pay increases around acquisition. In the year immediately following acquisition, only two of the seven coefficients are significantly positive. Acquirers with high CEO tenure tend to experience significantly higher increases in pay. However, this would appear to be the continuation of a trend because the coefficient for this variable is also significantly positive in the two years prior to acquisition. Furthermore, the difference between the coefficient for the acquisition year and the year prior to acquisition is not significant. The other significant coefficient is that for low external ownership. The results reported in Panel B are similar, although the coefficient for low external ownership is not significant. Pay changes around acquisition are not significantly affected by the strength of corporate governance, and hence would not appear to be a manifestation of weak corporate governance.

III. CONCLUSIONS

In this study we examine the impact of a comprehensive sample of acquisitions on executive compensation. It is the analysis of this comprehensive sample, which includes foreign, domestic, public and private acquisition targets, that marks our key contribution to the literature. Previous studies in contrast examine only acquisitions of domestic public targets, which account for less than 13 percent of our sample. Ours is the first study therefore to provide evidence on acquisition pay impacts which are robust to the inclusion of all acquisition types. We find that acquisitions result in significant pay increases in the year following acquisition, but that the increase is transitory and offset by a similar decline two years after acquisition, consistent with the initial increase representing a one off bonus payment rather than a permanent salary increase.

A number of reasons have been advanced as to why cross-border and public acquisitions will have relatively high pay impacts. We provide the first comparison of these different types of acquisition. Although cross-border acquisitions increase international exposure, and such exposure is linked generally to higher pay, we find no evidence of higher pay increases relative to domestic acquisitions. However, we do find that initial cross-border acquisitions, which presumably have a greater impact on the firm's international exposure than subsequent ones, result in higher pay changes. Therefore, cross-border acquisitions do appear to have a larger impact on pay when increases in international exposure are important. We find no evidence of differences between public and private acquisitions.

We find that acquisitions of target firms with higher pay levels than the acquirer result in higher pay changes. Since the majority of cross-border targets are from the US, which has higher pay levels than the UK, one may expect to observe higher pay increases following US acquisitions, yet we find no evidence of this. Such pay disparities between acquirer and target do not appear frequent enough to affect average outcomes, and as such, mergers are unlikely to bring about convergence of UK executive pay levels to US levels as some authors have argued.

One of the primary considerations of the extant literature is whether motivations exist to make acquisitions, even wealth destructive ones, because of executive pay considerations. Ours is the first study to consider these issues for a comprehensive acquisition sample. We find that acquirers that are paid more following acquisition are more likely to carry out future and relatively large acquisitions. There is no evidence that pay changes are related to acquisition performance, and bad and good acquisitions result in similar pay increases. However, in wealth destroying acquisitions, the decline in CEO share value far outweighs the increase in executive pay and therefore distorted incentives do not appear to exist, given average CEO shareholdings, for acquirers to pursue wealth destroying acquisitions. Finally, we find no evidence that pay awards around acquisition are greater when corporate governance is weaker, and therefore no evidence that acquisition pay awards are a manifestation of poor corporate governance.

NOTES

1. The positive connection between compensation and firm size can be explained by efficiency reasons such as matching theory and tournament theory (Rosen, 1992), and in the context of an acquisition because the merger integration process is more complex and requires more work (Demsetz, 1995).

2. Kroll et al. (1990), Kroll et al. (1997), and Wright et al. (2002) show that a positive relation between compensation and acquisition performance only holds when corporate governance is strong.

3. Furthermore, they have differential impacts on performance; Cross-border deals under perform domestic deals, whilst public deals under perform private deals (Conn et al., 2005).

4. Anecdotal evidence of large increases in executive compensation following cross-border acquisitions has caught the attention of the media. For example, following the cross-border acquisitions of Mannesmann and AirTouch by Vodafone in 2000, Vodafone CEO Chris Gent was awarded a £10m special bonus which was defended on the grounds that Vodafone's executives were poorly paid compared with those in America, and should be entitled to "catch up" payments (The Economist, 15th July 2000, pp. 20-21).

5. For these reasons some authors have argued that cross-border acquisitions will be a significant factor in causing executive pay levels to converge over time towards the highest common denominator, in particular that of the US (Cheffins and Thomas, 2004).

6. Cross-border acquisitions in high pay countries may increase pay because acquirer executives gain the experience necessary to compete for positions and remuneration at target country firms, or because target country firms become included as peer group firms used to determine pay levels (Cheffins and Thomas, 2004).

7. Agency-theory models predict that if diffuse private owners find it harder than large private owners to monitor executive effort, they will need to pay more to induce optimal effort levels (Ke et al., 1999).

8. We employed different instruments for Δ ln *Pay it-1*, including a greater number of lags of pay levels (ln *Pay it-3* and ln *Pay it-4*), and the lagged pay change (Δ ln *Pay it-2*). The results were similar using these methods.

9. Deal values in foreign currency were converted to sterling using the exchange rate at the announcement month.

10. The variables in Tables 3 and 4, and employed in the subsequent analysis are expressed in 2001 sterling values (deflated using the UK Retail Price Index) and winsorized at the 1st and 99th percentiles to remove outliers.

11. In additional tests we employed different explanatory variables. We replaced profitability with the annual share return, and included the standard deviation of share returns as a risk measure. These variables have coefficients of 0.028 (*p*-value of 0.000) and -0.166 (*p*-value of 0.000) respectively. We also employed industry dummy variables to control for different industry pay levels. Our key conclusions are not affected by their inclusion.

12. In additional tests, we also included dummy variables for years *t*-4, *t*-3, *t*+3, and *t*+4. The coefficients for these variables were close to zero and statistically insignificant.

13. As a robustness check, we recalculated our results using only the 2,238 acquisitions for which target sales data is available. The results are very similar.

14. One concern is that acquirer sales will not reflect fully the sales of the new merged entity in the acquisition year because, under acquisition accounting, target sales are included only from the acquisition date. A significantly positive coefficient could therefore simply be picking up an effect of sales that will be reflected in following years. To check this potential bias we employ market and book values instead, yet find very similar results.

15. Girma et al. (2006) find that hostile acquisitions experience a negative impact two years after acquisition. However, the decline we observe can not be explained by hostile acquisitions, since the decline also holds for private acquisitions, all of which are friendly in nature.

16. Since target size is an important determinant of pay increases, and target size is greater in public and cross-border acquisitions, one would expect that public and cross-border acquisitions have a greater impact on pay when target size is not controlled for. To check this, we estimate Columns (1)-(6) of Table 6 without the relative size variables. However, the results are very similar to those in Table 6.

17. Since our sample contains multiple acquirers, we examine the relation between pay impacts and the order of an acquisition within a merger series. Previous studies (see e.g., Conn et al., 2004) have found that performance impacts decline with acquisition order for multiple acquirers. We include the bid order as an explanatory variable in Column (1) of Table 5. The coefficient has a value of 0.006 and is statistically insignificant (*p*-value of 0.177). Therefore we find no evidence that pay impacts are associated with bid order.

18. The average CAR for the entire sample of acquisitions is 0.96 percent. 51.26 percent of the sample acquisitions have a positive CAR, whilst 48.74 have a negative CAR.

19. We also examine the relation between pay changes and the CAR itself, thus considering CAR magnitude and not just its sign. The coefficient for this variable is statistically insignificant (value of 0.24, *p*-value of 0.79).

20. We re-estimated the regressions in Columns (1) and (4) of Table 8, including dummy variables for public and cross-border acquisitions, as in Table 6. The coefficients are very similar to those in Table 6, and hence conclusions on the impact of public and cross-border deals are robust to controlling for acquisition performance.

21. Data is available for the year prior to acquisition for the following number of acquisitions: CEO tenure (643), CEO-chairman (1,231), CEO ownership (1,001), board ownership (1,230), and off board ownership (1,230).

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